

Date: Sat, 11 Jun 94 04:30:24 PDT
From: Ham-Homebrew Mailing List and Newsgroup <ham-homebrew@ucsd.edu>
Errors-To: Ham-Homebrew-Errors@UCSD.Edu
Reply-To: Ham-Homebrew@UCSD.Edu
Precedence: Bulk
Subject: Ham-Homebrew Digest V94 #158
To: Ham-Homebrew

Ham-Homebrew Digest Sat, 11 Jun 94 Volume 94 : Issue 158

Today's Topics:

cb antenna
Make a simple scanner?
PCB layout software for Mac? (2 msgs)
PCB layout software for PC
Transmitting Tube Cooling, Summary
VHF/UHF amp projects (2 msgs)
Wide Range Freq. Discriminator circuit wanted (2 msgs)

Send Replies or notes for publication to: <Ham-Homebrew@UCSD.Edu>

Send subscription requests to: <Ham-Homebrew-REQUEST@UCSD.Edu>

Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Homebrew Digest are available (by FTP only) from UCSD.Edu in directory "mailarchives/ham-homebrew".

We trust that readers are intelligent enough to realize that all text herein consists of personal comments and does not represent the official policies or positions of any party. Your mileage may vary. So there.

Date: 10 Jun 94 18:38:06 GMT
From: [sdd.hp.com!saimiri.primate.wisc.edu!news.doit.wisc.edu!
foral@hplabs.hpl.hp.com](mailto:sdd.hp.com!saimiri.primate.wisc.edu!news.doit.wisc.edu!foral@hplabs.hpl.hp.com)
Subject: cb antenna
To: ham-homebrew@ucsd.edu

I hope some one can help with my questions:

In my car, I want to use the AM/FM antenna for my cb. I know I will have to attach the shield of the cb coax to the veh. My questions are:

Will this work (I am not looking for an great antenna, just one that would work when needed)?

Where should I attach the sheild (to the frame, body, or doesn't matter)?

I don't use the cd very often and don't want to permanently attach a cb antenna, nor do I want to use an magnetic mount. If you can help or if you know of an antenna that I might use, contact me at:

foral@cae.wisc.edu

Thanks

Jim

Date: Thu, 09 Jun 94 08:55:07 GMT
From: ihnp4.ucsd.edu!dog.ee.lbl.gov!agate!howland.reston.ans.net!wupost!waikato!canterbury.ac.nz!equinox.gen.nz!equinox!fishtank!erik@network.ucsd.edu
Subject: Make a simple scanner?
To: ham-homebrew@ucsd.edu

Would anybody have any plans on how to build a *REALLY* simple scanner. Freq range is not important really, as long as it gets something different. And ideas/suggestions appreciated..

Cheers..

Date: 9 Jun 1994 20:58:03 GMT
From: ihnp4.ucsd.edu!usc!howland.reston.ans.net!math.ohio-state.edu!news.acns.nwu.edu!kgkmac.repoc.nwu.edu!user@network.ucsd.edu
Subject: PCB layout software for Mac?
To: ham-homebrew@ucsd.edu

In article <2t7qn0\$2aq@gerald.cc.utexas.edu>, bsn@hagar.ph.utexas.edu () wrote:

> Does anyone know of circuit board layout software for the Mac. Either
> commercial, shareware or freeware.
>
> Thanks,
>
> Barry W5KH

Barry

There are two that I know of, Vamp Inc has McCad EDS and Douglass Electronics also has a system for the Mac. Both offer Schematic Capture, PCB Layout and Autorouting among other features. I don't have any real experience with either one, but I believe they will send you a demo disk.

Address:

Vamp Inc.
6753 Selma Ave.
Los Angeles, CA 90028
(213) 466-5533

and

Douglas Electronics Inc.
2777 Alvarado St.
San Leandro, CA 94577
(510) 483-8770

Hope this helps.

Regards

Ken

Kenneth Kalan PP ASEL
Northwestern University
Prosthetics Research Laboratory
Rehabilitation Engineering Program
kgk@nwu.edu

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Date: Fri, 10 Jun 1994 07:29:38 GMT
From: news.claremont.edu!paris.ics.uci.edu!csulb.edu!csus.edu!netcom.com!
n1gak@uunet.uu.net
Subject: PCB layout software for Mac?
To: ham-homebrew@ucsd.edu

In article <kgk-090694155414@kgkmac.repoc.nwu.edu>,
Kenneth Kalan <kgk@nwu.edu> wrote:
>In article <2t7qn0\$2aq@geraldo.cc.utexas.edu>, bsn@hagar.ph.utexas.edu ()
>wrote:
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>> Barry W5KH
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>-----
>Kenneth Kalan      PP ASEL
>Northwestern University      ===_ / |
>Prosthetics Research Laboratory | ___/[___] \___/___ |
>Rehabilitation Engineering Program | \__ -|___|_____===/
>kgk@nwu.edu              |   \ /
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I've used both of these packages >VERY< extensively ...

Douglas: Cheaper. Less featureful. I kinda prefer the layout tools in Douglas if I'm going to do totally-by-hand merely using the computer instead of tape & mylar. The schematic capture was good. The autorouter bites. Poor use of color. (I have to admit: I was using a somewhat ancient version)

McCad: I use this almost exclusively now. I don't like the schem capture as much as Douglas' (Douglas does bussing much better) but I just LOVE the layout stuff. It was MUCH more intuitive than Douglas, and dealt with multi-layer more gracefully. It was much more expensive (\$10K). I also had to build quite a few devices for the schem capture that I thought should have come with it (they did in Douglas). Good use of color.

If you're only going to do 2-layer boards, and don't mind the lame autorouter, go with Douglas.

If you're going to do serious layouts, (like for money) spend the bucks and get VAMPs.

Douglas had no copy protection.

VAMP used scarred-disk, but you could install 3 copies, or use the master copy as a key-disk, and it came with 2 copies of every disk.

Scott

Date: Fri, 10 Jun 1994 12:15:10 GMT
From: ihnp4.ucsd.edu!dog.ee.lbl.gov!agate!spool.mu.edu!sol.ctr.columbia.edu!news.ess.harris.com!adm01.rfc.comm.harris.com!gdian22@network.ucsd.edu
Subject: PCB layout software for PC
To: ham-homebrew@ucsd.edu

Hello All -

For a while now, I have been making PC boards using magazine artwork and the toner method. Now I want to make my own artwork from a schematic. Any advice on software that will fit the bill?

Operating Environment:

1. This is a hobby effort, so cost has to be kept low
2. The boards will all be one layer, on single sided board.
3. The software can be DOS or windows-based.

Thanks. I'd like to make artwork (then boards) for some of the projects described in "Solid State Design for the Radio Amateur".

73, gary n2jgu
gmd@rfc.comm.harris.com

Date: 6 Jun 94 12:26:54 EDT
From: psinntp!main03!landisj@uunet.uu.net
Subject: Transmitting Tube Cooling, Summary
To: ham-homebrew@ucsd.edu

In article <1994Jun1.194957.19513@ccd.harris.com>, drs@ccd.harris.com (Doug Snowden) writes:

> 3. The idea I like the best is the use of temperature sensitive paint on the
> base of the tube. It was recommended that a few temperature ranges be
> painted on the base. The tube specs have the max. allowable base seal temp.
> All I need to do now is find a source.

Someone makes a series of stick on labels which have a range of dots that
change color according to the max temperature that they were exposed to.
The brand Tempril maybe or Tempilabel perhaps? Used to stick them on power
transistors and heat sinks when I worked in the field.

--

Joe Landis - System & Network Mgr. - North American Drager Co. Telford, PA
landisj@drager.com | uupsi5!main03!landisj | AA3GN@WB3JOE.#EPA.PA.USA
Opinions are mine only, and do not reflect those of my employer.

Date: Fri, 10 Jun 1994 15:08:48 GMT
From: overload.lbl.gov!dog.ee.lbl.gov!agate!howland.reston.ans.net!math.ohio-
state.edu!cyber2.cyberstore.ca!nntp.cs.ubc.ca!unixg.ubc.ca!quartz.ucsf.ualberta.ca!
gov.nt.ca!@lll-winken.llnl.gov
Subject: VHF/UHF amp projects
To: ham-homebrew@ucsd.edu

In article <7711907876328@vulcan.mcs.anl.gov> lent@vulcan.mcs.anl.gov (George E.
Lent) writes:

>I need more power for my 2M/70cm radios and am looking at trying to build
>some amplifiers. I need something somewhere in the 5w in -> >100w out.
>FM and SSB. I have tried the ramsey amp and it doesn't provide enough
>power to hit the repeater (we are in the mountains) Is there an art
>to building amps, or is it pretty straight forward? Could I take something
>like the ramsey amp and put a heftyer chip and heatsink to get more
>output? Is there some basic schematic that one can build off of?
>What kind of things does a newbie amp builder need to know?
>73
>kc4zqg
>
>lent@mcs.anl.gov
>

When comparing dollars per decibel your best bet is always to put up
the best antenna you can muster. That being said, though, amplifiers
are good beginner projects and will add a bit more oomph to your
signal. You're on the right track with the Ramsey kit. Also check
out Hamtronics and Communications Concepts (among others I'm sure).
Schematics and PCB layouts can be found in the ARRL Handbook.
Switching from a 1/4 wave ground plane to a 9 element yagi/quagi/quad
will give many times more gain than an amplifier, though.

Good luck!

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John Boudreau VE8EV      INTERNET: ve8ev@amsat.org
Inuvik, NWT, CANADA      PACKET: VE8EV@KL7GNG.#NAK.AK.USA.NA
=====
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Date: Fri, 10 Jun 1994 13:14:00 GMT
From: elroy.jpl.nasa.gov!swrinde!emory!rsiatl!ke4zv!gary@ames.arpa
Subject: VHF/UHF amp projects
To: ham-homebrew@ucsd.edu

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>like the ramsey amp and put a heftyer chip and heatsink to get more
>output? Is there some basic schematic that one can build off of?
>What kind of things does a newbie amp builder need to know?

A stable clean amp can be tricky at VHF/UHF, especially one with a lot of power gain per stage. If you plan to run it off 12 volts, the output impedance of the amp becomes very low as power is increased, so the matching network design becomes more critical. Tank losses can eat you alive. You'll likely be using push pull stages with single turns of silver plated heavy copper tubing as the primary with multiple turns of teflon coated line passing *through* the tubing for the secondary. You can't just substitute a heavier transistor in an existing circuit, you have to redesign the output network. You may have to redesign the input network too, but that's fairly trivial if you have several watts of drive. You can use heavy swamping for stability.

The easiest approach, however, is to do what the Japanese do in their newer mobile radios, use a hybrid power brick. These are designed to be 50 ohms in and out so matching becomes easy, and simple halfwave filters can control harmonics. They're also unconditionally stable in most cases, especially into reasonable SWR loads. However, most of these bricks only go up to about 50 watts. To get a 100 watt amp you'll need to combine two of them. A Wilkinson combiner will work.

Building medium and high power VHF/UHF amplifiers is not a good first project. Details matter in construction of these amplifiers in order to get good gain, efficiency, and stability. Construction

or design errors that don't matter much at HF, or at low power, can quickly fry expensive devices. Another name for a high gain VHF/UHF power amplifier is often *oscillator*. I strongly suggest going with a proven design and following the layout to the letter until you get more experience working with these beasts.

Gary

--

Gary Coffman KE4ZV		You make it,		gatech!wa4mei!ke4zv!gary
Destructive Testing Systems		we break it.		uunet!rsiatl!ke4zv!gary
534 Shannon Way		Guaranteed!		emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244				

Date: 10 Jun 94 16:26:23 GMT
From: sdd.hp.com!hpscit.sc.hp.com!rkarlqu@hplabs.hpl.hp.com
Subject: Wide Range Freq. Discriminator circuit wanted
To: ham-homebrew@ucsd.edu

In article <DEAN.94Jun10043709@splinter.coe.neu.edu>,
Dean Gelabert <dean@splinter.coe.northeastern.edu> wrote:

>Hi:

> Does anyone have a simple circuit for a wide range freq. discriminator?

>Something w/ a range of 30Mhz-1Ghz or so. Thanks for your help.

>-Dean

Use an MC10E016 to divide by 256, then use an MC10ELT21 to convert from ECL to TTL, and then use a 74LS109 dual flip flop to divide by 4. You now have a range of about 30 kHz. to 1 MHz. Use a frequency-to-voltage converter as a discriminator on this signal. Analog Devices makes some good F/V converters.

Rick Karlquist N6RK
rkarlqu@scd.hp.com

Date: 10 Jun 1994 08:37:09 GMT
From: ihnp4.ucsd.edu!dog.ee.lbl.gov!agate!howland.reston.ans.net!usc!
elroy.jpl.nasa.gov!lll-winken.llnl.gov!noc.near.net!chaos.dac.neu.edu!chaos.dac!
dean@network.ucsd.edu
Subject: Wide Range Freq. Discriminator circuit wanted
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End of Ham-Homebrew Digest V94 #158
